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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/541,619	07/07/2005	Masaharu Takada	P70693US0	7831

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EXAMINER	
COHEN, JODI F	

ART UNIT	PAPER NUMBER
4191	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/541,619	TAKADA ET AL.	
	Examiner	Art Unit	
	Jodi Cohen	4191	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE *3* MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☐ Responsive to communication(s) filed on _____.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-6* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-6* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *07/07/2005* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *07/13/2006, 10/13/2005*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

ONE-PACK HARDENING PASTE MATERIAL FOR USE IN FOAMING MACHINE

Claim Objections

1. Claim 5 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim Rejections - 35 USC § 112

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1-6 are rejected under 35 U.S.C. 112, second paragraph, for incorporation by reference to a specific figure. Note that where possible, claims are to be complete in themselves. Incorporation by reference to a specific figure or table "is permitted only in exceptional circumstances where there is no practical way to define the invention in words and where it is more concise to incorporate by reference than duplicating a drawing or table into the claim. Incorporation by reference is a necessity doctrine, not for applicant's convenience." Ex parte Fressola, 27 USPQ2d 1608, 1609 (Bd. Pat. App. & Inter. 1993) (Also see MPEP § 2173.05(s)).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

3. Claims 1-3,5,6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okuda et al. (EP 0 974 391) in view of Takashi et al. (JP 05-309329).

With respect to claims 1 and 5, Okuda disclose a method of mechanically mixing and dispersing a high viscosity paste material and a low-pressure gas [0026] to produce an expandable material, followed by discharging and expanding the expandable material to produce a cured product [0012], However Okuda do not disclose using as the paste material a one-pack type curing paste material having viscosity characteristics included in the zone defined by the relationship between shear rate and apparent viscosity of 50-30000 poises in low shear rate region of 0.43 sec^{-1} and a viscosity of 20-2000 poises in high shear rate region of 783 sec^{-1}.

Takashi disclose a sealing material with viscous properties of a specific value to achieve excellent watertight sealing effects as well as rust prevention [0015]. Takashi disclose the sealing material having a viscosity of 40 to 1000 poises, 50 to 150 poises, 10 to 30 poises and 4 to 10 poises of viscosity at a shearing speed at 20° C of 4.3 sec^{-1}, 62 sec^{-1}. 860 sec^{-1} and 104 sec^{-1}, respectively (Abstract). Therefore it would have been

obvious to one of ordinary skill in the art at the time of the invention to use the material of Takashi in the invention of Okuda to achieve excellent watertight sealing or pasting effects.

With respect to claim 2, Okuda disclose the method of mechanically mixing comprises supplying the low-pressure gas into a cylinder during and/or after a suction stroke of a piston pump which is reciprocated in the cylinder to carry out suction stroke and discharge stroke[0051]-[0053], then supplying the high viscosity paste material into the cylinder by batch process [0054]-[0055], carrying out the discharge stroke using the piston pump [0057], and discharging the low-pressure gas and the high viscosity paste material to a pipe in the discharge stroke [0057]-[0058].

With respect to claim 3, Okuda the method of producing an expandable material and discharging and expanding the expandable material is carried out by using a mechanical foaming apparatus comprising, a piston pump including a piston and a cylinder [0014], in which the piston is adapted to reciprocally move within the cylinder to effect suction stroke and discharge stroke [0014]; a gas supplying device for supplying a low-pressure gas into the cylinder under a predetermined pressure [0014], [0036]-[0037]; a high viscosity material supplying device for supplying a high viscosity material into the cylinder under a predetermined pressure [0014]; a control device for controlling the gas supply [0015], high viscosity material supply, and the piston pump. The mechanical foaming apparatus further comprises a discharge device for discharging and expanding the expandable material into the pipe by connecting the pipe of the expandable material [0022], [0058]-[0060].

With respect to claim 6, Takashi disclose a sealing material wherein the material is a moisture-curable type, a thermosetting type, a hot-melt type, a vulcanization-crosslinking type, or a photo/radiation-curable type, comprising polyurethanes, epoxies,, polyesters, acrylic ester, which is an acrylic resin, poly(vinyl chlorides), thermoplastics.

4. Claim 4 is rejected under 35 U.S.C. 103(a) as being unpatentable over as applied to the combined teachings of Okuda et al. (EP 0 974 391) and Takashi et al. (JP 05-309329) as applied to claims 1-3,5,6 as discussed in paragraph 3 above, and in further view of Cobbs, Jr. et al (US 4,778,631)

With respect to claim 4, the combined teachings of Okuda and Takashi disclose a method of mechanically mixing and dispersing a high viscosity paste material and a low-pressure gas to produce an expandable material, or foam, as discussed in paragraph 3 above. However Okuda and Takashi do not teach using the expandable material as an adhesive, a sealant, a coating material, or a gasketing material. Nor do Okuda and Takashi teach the high viscosity paste material being a moisture-curable type, a thermosetting type, a hot-melt type, a sol-gel type, a vulcanization-crosslinking type, or a photo/radiation-curable type, comprising silicones, polyurethanes, epoxies, synthetic rubbers, polyolefins, polyesters, acrylic resins, poly (vinyl chlorides), thermoplastics, and thermoplastic elastomers.

Cobbs found that the adhesive strength bond of a hot-melt adhesive could be significantly improved and in most cases, if it were applied as a foam. Cobbs disclose a foamed material having viscosities above 1,000,000 centipoises that is adapted for an

adhesive, a sealant, a coating material, a gasketing material, and a foamed molded material (Col 4; lines 58-68, Col 5; lines11-28). Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to utilize the expanding adhesive, or foam, taught by the combined teachings of Okuda and Takashi to the applications disclosed by Cobbs because it would have higher bonding strength than most hot-melt adhesives.

Furthermore Cobbs disclose the high viscosity material being the hot melt type or vulcanization type, or heat curing type; comprising of thermoplastic materials such as polystyrenes, or polyesters, ethyl acrylate, an acrylic resin, synthetic rubbers, polyethylene, a thermoplastic elastomer, polypropylene, a polyolefin, epoxies, chlorinated polyether, and other thermoplastics (Col 6; lines 7-65). Cobbs also disclose all of the above compositions being characterized by their thermoplastic nature which after being cured are substantially infusible and insoluble. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention to use the thermoplastic materials disclosed by Cobbs in the high viscosity paste material taught by Okuda and Takashi in order to produce a strong adhesive.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jodi Cohen whose telephone number is 571-270-3966. The examiner can normally be reached on Monday-Friday 9:00am-6:00pm Eastern.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dah-Wei Yuan can be reached on 571-272-1295. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Jodi Cohen
571-270-3966

/Dah-Wei D. Yuan/
Supervisory Patent Examiner, Art Unit 4191